

SEQUENCE LISTING

<110> Klee, Harry J. Lashbrook, Coralie Shrode, Lori

- <120> Materials and Methods for Tissue-Specific Targeting of Ethylene Insensitivity in Transgenic Plants
- <130> UF-325XC1
- <140> US 10/602,475
- <141> 2003-06-23
- <150> US 60/390,385
- <151> 2002-06-21
- <160> ; 16
- <170> PatentIn version 3.2
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- Phe Pro Tyr Arg Trp Val Leu Val Gln Phe Gly Ala Phe Ile Val Leu 50 55 60
- Tyr Gly Ala Thr His Leu Ile Asn Leu Trp Thr Phe Thr Thr His Ser 70 75 80
- Arg Thr Val Ala Leu Val Met Thr Thr Ala Lys Val Leu Thr Ala Val 85 90 . 95
- Val Ser Cys Ala Thr Ala Leu Met Leu Val His Ile Ile Pro Asp Leu
 100 105 110
- Leu Ser Val Lys Thr Arg Glu Leu Phe Leu Lys Asn Lys Ala Ala Glu 115 120 125
- Leu Asp Arg Glu Met Gly Leu Ile Arg Thr Gln Glu Glu Thr Gly Arg 130 135 140

His Val Arg Met Leu Thr His Glu Ile Arg Ser Thr Leu Asp Arg His 145 150 155 160

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- Thr Ile Leu Lys Thr Thr Leu Val Glu Leu Gly Arg Thr Leu Ala Leu 165 170 175
- Glu Glu Cys Ala Leu Trp Met Pro Thr Arg Thr Gly Leu Glu Leu Gln 180 185 190
- Leu Ser Tyr Thr Leu Arg His Gln His Pro Val Glu Tyr Thr Val Pro
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- Ile Gln Leu Pro Val Ile Asn Gln Val Phe Gly Thr Ser Arg Ala Val 210 215 220
- Lys Ile Ser Pro Asn Ser Pro Val Ala Arg Leu Arg Pro Val Ser Gly
 225 230 235 240
- Lys Tyr Met Leu Gly Glu Val Val Ala Val Arg Val Pro Leu Leu His
 245 250 255
- Leu Ser Asn Phe Gln Ile Asn Asp Trp Pro Glu Leu Ser Thr Lys Arg
 260 265 270
- Tyr Ala Leu Met Val Leu Met Leu Pro Ser Asp Ser Ala Arg Gln Trp 275 280 285
- His Val His Glu Leu Glu Leu Val Glu Val Val Ala Asp Gln Val Ala 290 295 300
- Val Ala Leu Ser His Ala Ala Ile Leu Glu Glu Ser Met Arg Ala Arg 305 310 315 320
- Asp Leu Leu Met Glu Gln Asn Val Ala Leu Asp Leu Ala Arg Arg Glu 325 330 335
- Ala Glu Thr Ala Ile Arg Ala Arg Asn Asp Phe Leu Ala Val Met Asn 340 345 350
- His Glu Met Arg Thr Pro Met His Ala Ile Ile Ala Leu Ser Ser Leu 355 360 365
- Leu Gln Glu Thr Glu Leu Thr Pro Glu Gln Arg Leu Met Val Glu Thr 370 380
- Ile Leu Lys Ser Ser Asn Leu Leu Ala Thr Leu Met Asn Asp Val Leu 385 390 395 400
- Asp Leu Ser Arg Leu Glu Asp Gly Ser Leu Gln Leu Glu Leu Gly Thr 405 410 415
- Phe Asn Leu His Thr Leu Phe Arg Glu Val Leu Asn Leu Ile Lys Pro 420 425 430
- Ile Ala Val Val Lys Lys Leu Pro Ile Thr Leu Asn Leu Ala Pro Asp

435 440 445

Leu Pro Glu Phe Val Val Gly Asp Glu Lys Arg Leu Met Gln Ile Ile
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Leu Asn Ile Val Gly Asn Ala Val Lys Phe Ser Lys Gln Gly Ser Ile 465 470 475 480

Ser Val Thr Ala Leu Val Thr Lys Ser Asp Thr Arg Ala Ala Asp Phe
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Phe Val Val Pro Thr Gly Ser His Phe Tyr Leu Arg Val Lys 500 505 510

Asp Ser Gly Ala Gly Ile Asn Pro Gln Asp Ile Pro Lys Ile Phe Thr 515 520 525

Lys Phe Ala Gln Thr Gln Ser Leu Ala Thr Arg Ser Ser Gly Gly Ser 530 540

Gly Leu Gly Leu Ala Ile Ser Lys Arg Phe Val Asn Leu Met Glu Gly 545 550 555 560

Asn Ile Trp Ile Glu Ser Asp Gly Leu Gly Lys Gly Cys Thr Ala Ile 565 570 575

Phe Asp Val Lys Leu Gly Ile Ser Glu Arg Ser Asn Glu Ser Lys Gln 580 585 590

Ser Gly Ile Pro Lys Val Pro Ala Ile Pro Arg His Ser Asn Phe Thr 595 600 605

Gly Leu Lys Val Leu Val Met Asp Glu Asn Gly Val Ser Arg Met Val 610 620

Thr Lys Gly Leu Leu Val His Leu Gly Cys Glu Val Thr Thr Val Ser 625 630 635 640

Ser Asn Glu Glu Cys Leu Arg Val Val Ser His Glu His Lys Val Val 645 650 655

Phe Met Asp Val Cys Met Pro Gly Val Glu Asn Tyr Gln Ile Ala Leu 660 665 670

Arg Ile His Glu Lys Phe Thr Lys Gln Arg His Gln Arg Pro Leu Leu 675 680 685

Val Ala Leu Ser Gly Asn Thr Asp Lys Ser Thr Lys Glu Lys Cys Met 690 695 700

Ser Phe Gly Leu Asp Gly Val Leu Leu Lys Pro Val Ser Leu Asp Asn 705 710 715 720

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Phe Pro Tyr Arg Trp Val Leu Val Gln Phe Gly Ala Phe Ile Val Leu 50 55 60

Tyr Gly Ala Thr His Leu Ile Asn Leu Trp Thr Phe Thr Thr His Ser 65 70 75 80

Arg Thr Val Ala Leu Val Met Thr Thr Ala Lys Val Leu Thr Ala Val
85 90 95

Val Ser Cys Ala Thr Thr Leu Met Leu Val His Ile Ile Pro Asp Leu
100 105 110

Leu Ser Val Lys Thr Arg Glu Leu Phe Leu Lys Asn Lys Ala Ala Glu 115 120 125

Leu Asp Arg Glu Met Gly Leu Ile Arg Thr Gln Glu Glu Thr Gly Arg 130 135 140

His Val Arg Met Leu Thr His Glu Ile Arg Ser Thr Leu Asp Arg His 145 150 155 160

Thr Ile Leu Lys Thr Thr Leu Val Glu Leu Gly Arg Thr Leu Ala Leu 165 170 175

Glu Glu Cys Ala Leu Trp Met Pro Thr Arg Thr Gly Leu Glu Leu Gln 180 185 190

Leu Ser Tyr Thr Leu Arg His Gln His Pro Val Glu Tyr Thr Val Pro 195 200 205

Ile Gln Leu Pro Val Ile Asn Gln Val Phe Gly Thr Ser Arg Ala Val 210 215 220

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Lys Tyr Met Leu Gly Glu Val Val Ala Val Arg Val Pro Leu Leu His
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- Tyr Ala Leu Met Val Leu Met Leu Pro Ser Asp Ser Ala Arg Gln Trp 275 280 285
- His Val His Glu Leu Glu Leu Val Glu Val Val Ala Asp Gln Val Ala 290 295 300
- Val Ala Leu Ser His Ala Ala Ile Leu Glu Glu Ser Met Arg Ala Arg 305 310 315 320
- Asp Leu Leu Met Glu Gln Asn Val Ala Leu Asp Leu Ala Arg Arg Glu 325 330 335
- Ala Glu Thr Ala Ile Arg Ala Arg Asn Asp Phe Leu Ala Val Met Asn 340 345 350
- His Glu Met Arg Thr Pro Met His Ala Ile Ile Ala Leu Ser Ser Leu 355 360 365
- Leu Gln Glu Thr Glu Leu Thr Pro Glu Gln Arg Leu Met Val Glu Thr 370 380
- Ile Leu Lys Ser Ser Asn Leu Leu Ala Thr Leu Met Asn Asp Val Leu 385 390 395 400
- Asp Leu Ser Arg Leu Glu Asp Gly Ser Leu Gln Leu Glu Leu Gly Thr 405 410 415
- Phe Asn Leu His Thr Leu Phe Arg Glu Val Leu Asn Leu Ile Lys Pro 420 425 430
- Ile Ala Val Val Lys Lys Leu Pro Ile Thr Leu Asn Leu Ala Pro Asp 435 440 445
- Leu Pro Glu Phe Val Val Gly Asp Glu Lys Arg Leu Met Gln Ile Ile 450 455 460
- Leu Asn Ile Val Gly Asn Ala Val Lys Phe Ser Lys Gln Gly Ser Ile 465 470 475 480
- Ser Val Thr Ala Leu Val Thr Lys Ser Asp Thr Arg Ala Ala Asp Phe 485 490 495
- Phe Val Val Pro Thr Gly Ser His Phe Tyr Leu Arg Val Lys 500 505 510
- Asp Ser Gly Ala Gly Ile Asn Pro Gln Asp Ile Pro Lys Ile Phe Thr 515 520 525

Lys Phe Ala Gln Thr Gln Ser Leu Ala Thr Arg Ser Ser Gly Gly Ser 530 540

6

Gly Leu Gly Leu Ala Ile Ser Lys Arg Phe Val Asn Leu Met Glu Gly 545 550 555 560

Asn Ile Trp Ile Glu Ser Asp Gly Leu Gly Lys Gly Cys Thr Ala Ile 565 570 575

Phe Asp Val Lys Leu Gly Ile Ser Glu Arg Ser Asn Glu Ser Lys Gln 580 585 590

Ser Gly Ile Pro Lys Val Pro Ala Ile Pro Arg His Ser Asn Phe Thr 595 600 605

Gly Leu Lys Val Leu Val Met Asp Glu Asn Gly Val Ser Arg Met Val 610 620

Thr Lys Gly Leu Leu Val His Leu Gly Cys Glu Val Thr Thr Val Ser 625 630 635 640

Ser Asn Glu Glu Cys Leu Arg Val Val Ser His Glu His Lys Val Val 645 650 655

Phe Met Asp Val Cys Met Pro Gly Val Glu Asn Tyr Gln Ile Ala Leu 660 665 670

Arg Ile His Glu Lys Phe Thr Lys Gln Arg His Gln Arg Pro Leu Leu 675 680 685

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Ser Phe Gly Leu Asp Gly Val Leu Leu Lys Pro Val Ser Leu Asp Asn 705 710 715 720

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Phe Pro Tyr Arg Trp Val Leu Val Gln Phe Gly Ala Phe Ile Val Leu 50 55 60

Tyr Gly Ala Thr His Leu Ile Asn Leu Trp Thr Phe Thr Thr His Ser 65 70 75 80

Arg Thr Val Ala Leu Val Met Thr Thr Ala Lys Val Leu Thr Ala Val
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Val Ser Cys Ala Thr Ala Leu Met Leu Val His Ile Ile Pro Asp Leu 100 105 110

Leu Ser Val Lys Thr Arg Glu Leu Phe Leu Lys Asn Lys Ala Ala Glu 115 120 125

Leu Asp Arg Glu Met Gly Leu Ile Arg Thr Gln Glu Glu Thr Gly Arg 130 135 140

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Glu Glu Cys Ala Leu Trp Met Pro Thr Arg Thr Gly Leu Glu Leu Gln 180 185 190

Leu Ser Tyr Thr Leu Arg His Gln His Pro Val Glu Tyr Thr Val Pro
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Ile Gln Leu Pro Val Ile Asn Gln Val Phe Gly Thr Ser Arg Ala Val 210 215 220

Lys Ile Ser Pro Asn Ser Pro Val Ala Arg Leu Arg Pro Val Ser Gly 235 230 235

Lys Tyr Met Leu Gly Glu Val Val Ala Val Arg Val Pro Leu Leu His

Leu Ser Asn Phe Gln Ile Asn Asp Trp Pro Glu Leu Ser Thr Lys Arg 260 265 270

Tyr Ala Leu Met Val Leu Met Leu Pro Ser Asp Ser Ala Arg Gln Trp 275 280 285

His Val His Glu Leu Glu Leu Val Glu Val Val Ala Asp Gln Val Ala 290 295 300

Val Ala Leu Ser His Ala Ala Ile Leu Glu Glu Ser Met Arg Ala Arg 305 310 315 320

Asp Leu Leu Met Glu Gln Asn Val Ala Leu Asp Leu Ala Arg Arg Glu

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Thr Lys Gly Leu Leu Val His Leu Gly Cys Glu Val Thr Thr Val Ser 625 630 635 640

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Phe Met Asp Val Cys Met Pro Gly Val Glu Asn Tyr Gln Ile Ala Leu 660 665 670

Arg Ile His Glu Lys Phe Thr Lys Gln Arg His Gln Arg Pro Leu Leu 675 680 685

Val Ala Leu Ser Gly Asn Thr Asp Lys Ser Thr Lys Glu Lys Cys Met 690 695 700

Ser Phe Gly Leu Asp Gly Val Leu Leu Lys Pro Val Ser Leu Asp Asn 705 710 715 \cdot 720

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Tyr Gly Ala Thr His Leu Ile Asn Leu Trp Thr Phe Thr Thr His Ser 65 70 75 80

Arg Thr Val Ala Leu Val Met Thr Thr Ala Lys Val Leu Thr Ala Val 85 90 95

Val Ser Cys Ala Thr Ala Leu Met Leu Val His Ile Ile Pro Asp Leu
100 105 110

Leu Ser Val Lys Thr Arg Glu Leu Phe Leu Lys Asn Lys Ala Ala Glu 115 120 125

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- Phe Asn Leu His Thr Leu Phe Arg Glu Val Leu Asn Leu Ile Lys Pro 420 425 430
- Ile Ala Val Val Lys Lys Leu Pro Ile Thr Leu Asn Leu Ala Pro Asp 435 440 445
- Leu Pro Glu Phe Val Val Gly Asp Glu Lys Arg Leu Met Gln Ile Ile 450 455 460
- Leu Asn Ile Val Gly Asn Ala Val Lys Phe Ser Lys Gln Gly Ser Ile 465 470 475 480
- Ser Val Thr Ala Leu Val Thr Lys Ser Asp Thr Arg Ala Ala Asp Phe
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- Phe Val Val Pro Thr Gly Ser His Phe Tyr Leu Arg Val Lys 500 505 510
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- Arg Ile His Glu Lys Phe Thr Lys Gln Arg His Gln Arg Pro Leu Leu 675 680 685
- Val Ala Leu Ser Gly Asn Thr Asp Lys Ser Thr Lys Glu Lys Cys Met 690 695 700
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cat gtg aga atg ttg act cat gag att aga agc act tta gat aga cat

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		tgt Cys	-	_		_			_						_	576
		tat Tyr 195														624
		tta Leu	_									_		_	_	672
		tct Ser						_		_	-		_			720
		atg Met														768
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		cat His														912
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		aca Thr			-	_	_		_				_	_		1056
		atg Met 355														1104

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	-				agt Ser				_	_		_	_		1536
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Glu Thr Gln Arq Val Ser Asp Phe Leu Ile Ala Val Ala Tyr Phe Ser 55 Ile Pro Ile Glu Leu Leu Tyr Phe Val Ser Cys Ser Asn Val Pro Phe 75 Lys Trp Val Leu Phe Glu Phe Ile Ala Phe Ile Val Leu Cys Gly Met Thr His Leu Leu His Gly Trp Thr Tyr Ser Ala His Pro Phe Arg Leu 105 Met Met Ala Phe Thr Val Phe Lys Met Leu Thr Ala Leu Val Ser Cys 120 115 Ala Thr Ala Ile Thr Leu Ile Thr Leu Ile Pro Leu Leu Leu Lys Val 135 Lys Val Arg Glu Phe Met Leu Lys Lys Lys Ala His Glu Leu Gly Arg 150 155 Glu Val Gly Leu Ile Leu Ile Lys Lys Glu Thr Gly Phe His Val Arg Met Leu Thr Gln Glu Ile Arg Lys Ser Leu Asp Arg His Thr Ile Leu 185 Tyr Thr Thr Leu Val Glu Leu Ser Lys Thr Leu Gly Leu Gln Asn Cys 195 Ala Val Trp Met Pro Asn Asp Gly Gly Thr Glu Met Asp Leu Thr His 215 Glu Leu Arg Gly Arg Gly Gly Tyr Gly Gly Cys Ser Val Ser Met Glu 235 Asp Leu Asp Val Val Arg Ile Arg Glu Ser Asp Glu Val Asn Val Leu 245 Ser Val Asp Ser Ser Ile Ala Arg Ala Ser Gly Gly Gly Asp Val 265 Ser Glu Ile Gly Ala Val Ala Ala Ile Arg Met Pro Met Leu Arg Val Ser Asp Phe Asn Gly Glu Leu Ser Tyr Ala Ile Leu Val Cys Val Leu 295 Pro Gly Gly Thr Pro Arg Asp Trp Thr Tyr Gln Glu Ile Glu Ile Val 310 315 Lys Val Val Ala Asp Gln Val Thr Val Ala Leu Asp His Ala Ala Val 325 330

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- Asn Ala Phe Gln Lys Thr Met Ser Glu Gly Met Arg Arg Pro Met His 370 375 380
- Ser Ile Leu Gly Leu Leu Ser Met Ile Gln Asp Glu Lys Leu Ser Asp 385 390 395 400
- Glu Gln Lys Met Ile Val Asp Thr Met Val Lys Thr Gly Asn Val Met 405 410 415
- Ser Asn Leu Val Gly Asp Ser Met Asp Val Pro Asp Gly Arg Phe Gly 420 425 430
- Thr Glu Met Lys Pro Phe Ser Leu His Arg Thr Ile His Glu Ala Ala 435 440 445
- Cys Met Ala Arg Cys Leu Cys Leu Cys Asn Gly Ile Arg Phe Leu Val 450 455 460
- Asp Ala Glu Lys Ser Leu Pro Asp Asn Val Val Gly Asp Glu Arg Arg 465 470 475 480
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- Lys Arg Gln Glu Gly Ser Ser Leu Met Phe Lys Val Leu Lys Glu Arg 500 505 510
- Gly Ser Leu Asp Arg Ser Asp His Arg Trp Ala Ala Trp Arg Ser Pro 515 520 525
- Ala Ser Ser Ala Asp Gly Asp Val Tyr Ile Arg Phe Glu Met Asn Val 530 540
- Glu Asn Asp Asp Ser Ser Ser Gln Ser Phe Ala Ser Val Ser Ser Arg 545 550 555 560
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- Gln Asp Leu Ser Phe Gly Val Cys Lys Lys Val Val Gln Leu Ile His
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- Gly Asn Ile Ser Val Val Pro Gly Ser Asp Gly Ser Pro Glu Thr Met
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 610 615 620
- Ser Ser Glu Ser Pro Ala Pro Asp His His Ala His Pro His Ser Asn

625				630					635					640	
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Asn Arg	y Ala	Val 660	Thr	Arg	Lys	Leu	Leu 665	Glu	Lys	Leu	Gly	Cys 670	Asp	Val	
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Met Ala 705	Glu	Met	Asp	Gly 710	Tyr	Glu	Val	Ala	Met 715	Arg	Ile	Arg	Ser	Arg 720	
Ser Trp) Pro	Leu	Ile 725	Val	Ala	Thr	Thr	Val 730	Ser	Leu	Asp	Glu	Glu 735	Met	
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_								_	_		_	_	gac Asp	_		5	510
	_			_						_			aga Arg	_	_	5	558
_				_	_	_							gag Glu			6	506
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Phe	Lys 120	Met	Leu	Thr	Ala	Leu 125	Val	Ser	Cys	Ala	Thr 130	Ala	att Ile	Thr	Leu	7	98
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23 · UF-325XC1

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